

REMARKS/ARGUMENTS

Favorable reconsideration of this application, as presently amended and the following remark, is respectfully requested.

Claims 1, 5-7, 9-11, 15, 18-19 and 23-24 are pending in this amendment. By this amendment, Claims 1 and 11 are amended; and no claims are cancelled or added herewith. It is respectfully submitted that no new matter is added by this amendment.

Applicants appreciate the courtesies extended to Applicants representative during the personal interview held April 20, 2009. Applicant's statement of substance of the personal interview is incorporated into the above amendments and following remarks.

In the outstanding Office Action, Claims 1, 5-7, 9 and 10 were rejected under 35 U.S.C. § 103(a) as being unpatentable over JP 2000331998 to Kazumi in view of U.S. Patent No. 6,091,045 to Mabuchi and in view of U.S. Patent No. 5,234,526 to Chen; Claims 11 and 24 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kazumi in view of Mabuchi and further in view of U.S. 2002/0020498 to Ohmi; Claim 15 was rejected under 35 U.S.C. § 103(a) over Kazumi, Mabuchi, Ohmi in view of Chen; and Claim 23 was rejected under 35 U.S.C. § 103(a) over Kazumi, Mabuchi, Ohmi and Chen.

It is respectfully submitted that the applied art does not teach or suggest a dielectric flat plate portion formed to face the substrate, the dielectric flat plate portion extending substantially horizontally to the chamber side walls, a dielectric sidewall portion formed to extend from a peripheral region of the flat plate portion towards the substrate along the chamber side walls towards the substrate in a plasma generation region, sides of the flat portion and the sidewall portion have a curved surface facing the plasma generation region and extending between the flat plate portion and the sidewall portion, wherein the microwave propagates from the flat plate portion to the sidewall portion and then is supplied towards a

periphery portion of the substrate, thereby enhancing a uniformity of a plasma density in a radial direction of the substrate, as recited in Claim 1 and similarly recited in Claim 11.

In contrast, Chen discusses a plasma device as an electron cyclotron resonance (ECR) plasma device and is used to produce a plasma in the plasma formation chamber 104. The produced plasma is introduced the reaction chamber 108 through open end 104a of plasma formation chamber 104, and the plasma introduced into the reaction chamber 108 is used to process the substrate supported on a substrate support disposed in the reaction chamber 108. Chen discusses supplying the microwave to a periphery portion of the top part 100 asserted in the Office Action as the top plate member of present invention. However, Claims 1 and 11 similarly recite that the microwave is supplied towards a periphery portion of the substrate thereby enhancing a uniformity of a plasma density in a radial direction of the substrate. These features are not disclosed in Chen.

Mabuchi discusses that the uniformity of plasma distribution can be obtained by choosing the shape of the recess. For example, the top of the reaction room 12 is covered with a microwave window 14, so that the microwave window 14 seals the reaction room 12 with an O-ring 20. The microwave window 14 has a recess 14a formed in its section facing the sample S. A dielectric plate 32 is disposed over the reaction chamber 11 to face the microwave window 14. The microwave window 14 has a middle area (recess) facing the substrate that is thinner than the remaining area of the microwave window 14. Mabuchi does not disclose or suggest that the sidewall portion of the dielectric plate is disposed on the inner side of the sidewall of the chamber. Thus, Applicant respectfully insists that Mabuchi not teach how to enhance a uniformity of a plasma density in a radial direction of the substrate.

Again, Claims 1 and 11 similarly recite that a dielectric flat plate portion extends substantially horizontally to the chamber side walls, a dielectric sidewall portion formed to extend from a peripheral region of the flat plate portion towards the substrate along the

chamber side walls towards the substrate in a plasma generation region, sides of the flat portion and the sidewall portion have a curved surface facing the plasma generation region. These features are not taught or suggested by the applied art. Kazumi does not make up for the deficiencies of the applied art discussed above.


Accordingly, for at least the reasons discussed above, it is respectfully requested that the rejection of the claims under 35 U.S.C. § 103(a) be withdrawn.

Consequently, for the reasons discussed in detail above, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal allowance. Therefore, a Notice of Allowance is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact the undersigned representative at the below listed telephone number.

Respectfully submitted,

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